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7 JUL 1959

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Eatimention by Statistical Techniques of Twee Cristians on Community Office & Relivorde in 1998

REFERANCE:

Services Division China Committee Minutes, 49 March 1959

1. The following explanation and attached worksheets are offered in answer to your request regarding the details of the statistical method used to estimate time originated on the Chinese railroads in 1955.

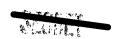
## 2. Comparison between Rate of Growth of Modern Transport and Production of Salected Commodities

A multiple correlation between tons originated by the railroads and the production of coal, cement, and ferrous minerals and metals in Communist Caina was computed for the years 1950-57. These commodities were chosen because they may be considered the key commodities both from the standpoint of transport and industrial growth in the stage of economic development in which Communist China is at present. The taree commodities constitute roughly 40 percent of the tonnage originated by the vailroads. The coefficient of correlation was found to be .99, or nearly perfect correlation between the commodities as the three independent variables and rail tons originated as the dependent variable.

In a study of freight transportation and industrial growth in India the same general relationship was found to be true for other countries in early periods of economic development and with comparable conditions such as size of country and geographical distribution of resources. In the USA during 1890-1915, the USBR during 1928-55, and India during 1931-55, the ratio of freight turnover to the output of these selected commodities maintained a more on less steady pattern. 1

One would expect the same relationship to be true in 1958 in Communist Chins, judging from the nearly perfect correlation in 1950-57 and the evidence from other countries. To determine whether this was the intention in 1958, the 1958 production estimates were substituted in the expession equation for the multiple correlation and the equation solved to the dependent variable. The results were that with production estimates 70 million tons of coal, il million to a feement, and 96 million tons of the minerals and metals, the tonnage originated by the railroads should have been 520 million metric tons.

Mia, Railway Board. Indian Rai 40.4. 31. 3, no. 6, Sep 58, p. 519. U.



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BUB DOT: Estimation by Statistical Techniques of Tons Originated on Communist China's Railroads in 1958

The Chinese Communists announced the much lower performance of 380 million tons originated, a figure which should be 37 percent atgher if it were to show the same increase over 1957 as was shown by the production estimates. If, however, production estimates for 1958, which exclude the vast quantities of handleraft or native production tot included in the data for 1950-57, are substituted in the regression equation (coal, 208 million tons; camen: 8." million tons; and ferrous products, 51 million tons), the resulting figure for tons originated is 385 million tons. This is only one percent nigher than the announced performance of 380 million tons.

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Attachments: Worksheets